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## Research Article

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# International Master's Degree Students' Well-being at a Finnish University During COVID-19

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**Abstract:** The rapid developments and consequences of the COVID-19 crisis for university students' well-being are presently being studied across the world. This study contributes to the growing discourse on university students' well-being by exploring changes in international Master's degree students' well-being in relation to the move to online teaching and learning at a Finnish university during the COVID-19 pandemic. The study draws on 37 answers to an open-ended question about remote teaching and learning at the end of a survey on university students' stress. The text data were analysed conducting a preliminary quantitative content analysis and a more detailed thematic analysis, from which two themes were developed. The first theme concerned respondents' well-being with regard to their friends and family, including the desire for human connection, ways of coping and health concerns. The second theme concerned respondents' well-being with regard to their studies, including the importance of social life on campus, affected concentration and motivation, degree-related complications, and online teaching and supervision. The findings suggest that sociocultural well-being may extend beyond acculturation and that decreased psychological well-being has repercussions for international students' studies. The study concludes with a discussion of the study's limitations and practical implications.

**Keywords:** international students; university students; psychological well-being; sociocultural adjustment; online teaching and learning.

## 1 Introduction

Higher education is an environment that presents many potential stressors to higher education students, whose increasingly prevalent stress has been documented over the past decades (for a review, see Robotham & Julian, 2006). More recently, university students' poor mental health has alerted higher education institutions (HEIs) to the importance of addressing undergraduates' stress levels; university studies, although naturally challenging, may also be overwhelming and affect degree completion, which in turn affects university reputation and funding (Beer & Lawson, 2017; Harris, Casey, Westbury, & Florida-James, 2016). Hence, the sustainability of HEIs is affected, which is also connected to the additional revenue from international Master's degree programmes (IMDPs) offered by universities in response to changes in global economy and internationalisation trends. Finland, for instance, has shifted in favour of European market-driven policies and has taken active internalisation measures in higher education, becoming a leading provider of English-taught IMDPs – currently, more than 200 – in the Nordic region and attracting applicants predominantly from Russia, Vietnam, China, Nepal, India and Pakistan (Filippou, 2019). International Master's degree students (IMDSs), however, differ from other student cohorts in that they “cross borders for the sole purpose of study” (OECD, 2019, p. 230), and complete a degree requiring high academic skills and proficient command of a second or foreign language. Moreover, international student mobility is not so much an individual endeavour as it is one “involving families, both financially and emotionally” (Bilecen, 2020, p. 265). Consequently, IMDSs' need for support and experiences of stress, anxiety and other negative emotions affecting their well-being may be more pronounced than those reported by domestic peers (e.g. Andrade, 2006; Beiter et al., 2015; Saleh, Camart, & Romo, 2017; Wong, Cheung, Chan, Ma, & Tang, 2006).

While the immediate psychological responses to the coronavirus disease 2019 (COVID-19) are being internationally explored among the general, health-

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care and clinical populations (Talevi et al., 2020), the current pandemic circumstances present interesting ecological conditions within which to examine IMDs' well-being. Universities closing their campuses due to the pandemic translated into international students staying in the host country longer, raising concerns for finances, accommodation, interruption of studies and resources for participation in classes from home (Sahu, 2020). International students were also concerned with issues of health, safety and immigration, rather than with academic experiences and institutional support available at the universities they attended (Chirikov & Soria, 2020). Moreover, social networks may have been particularly disrupted during the pandemic when, in addition to social distancing, international students encountered xenophobic attitudes and discrimination, such as Asian international students (Bilecen, 2020; Nguyen & Balakrishnan, 2020). Social networks have a mitigating effect over stress for university students, who experience pressure for academic performance and may develop mental health problems as a consequence (Elmer, Mepham, & Stadtfeld, 2020). In addition to these matters, research prior to the pandemic showed that while international students in both contact and online study programmes report high levels of academic and social isolation, those in online study programmes report feeling more isolated than those in contact study programmes (Erichsen & Bolliger, 2011). Thus, in times of social distancing and continuation of university education via online telecommunication platforms, IMDs' well-being may be negatively affected. The world-wide phenomenon of COVID-19 and the challenges it has presented to university students' well-being are presently being examined around the world (e.g. in California, Chirikov & Soria 2020; in Switzerland, Elmer et al., 2020; in Canada, Firang, 2020; in China, Li et al., 2020; in Spain, Odriozola-González, Planchuelo-Gómez, Iruñia, & de Luis-García, 2020; and elsewhere, Sahu, 2020).

This study contributes to the growing discourse on university students' well-being by exploring how moving teaching and learning online as a safety measure during the COVID-19 outbreak and concurrent restrictions affected the well-being of international students pursuing a Master's degree at a Finnish university. The majority of Master's degree programmes in Finland involve contact teaching, but all contact-based study programmes continued exclusively online in the spring semester of 2020 as a precaution against COVID-19. This also applied to the contact-based IMDs at the examined university as of March 2020. In addition, all students were unable to use facilities on campus (e.g. student cafeterias, libraries,

gym, study areas with computers). The most recent annual statistical report shows that the examined university had 13788 students in 2019, of which 4% were international students and 270 had enrolled as present for the academic year in Master's degree programmes (Vipunen - Education Statistics Finland, 2020). The next section outlines the concept of well-being in higher education and presents the adjustment problems international university students have in common.

## 2 International students' well-being

The increasing internalisation of higher education in recent years has drawn scholarly attention to international university students' subjective experiences. Well-being can be understood as a higher-order construct pertaining to a sense of satisfaction with one's condition of existence, involving health, happiness and prosperity (Zhou & Parmanto, 2020). A definition of well-being can more integratively include "being at ease with oneself, having meaning and fulfilment, experiencing positive emotions, being resilient and belonging to a respectful community" (Campion & Nurse, 2007, cited in Henning et al., 2018, p. 1). Thus, well-being can not only be clinically operationalised to examine depression, anxiety, stress and substance abuse, but also psychologically operationalised to examine subjective evaluations of life satisfaction (Hattie, Myers, & Sweeney, 2004). Quantitative measurements of well-being have examined various domains or lower-order constructs of well-being (e.g. social, emotional, financial and environmental well-being), although tools providing a comprehensive well-being assessment in the particular population of people at the university, such as students and faculty, are only recently being developed (Zhou & Parmanto, 2020). Nonetheless, well-being as a multidimensional concept has been examined in relation to university students (e.g. Akhtar & Kroener-Herwig, 2019; Robotham & Julian, 2006).

Alharbi and Smith's (2018) recent review of studies on international students' stress and well-being in English-speaking countries concludes that there has been little research on international students' well-being. In addition, the authors' review highlights the general focus on stressors and psychological problems at the expense of more positive factors conducive to health and well-being. In the case of international students, Alharbi and Smith (2018) note that well-being may involve subjective well-being, including life satisfaction and affect-related

positive and negative effects, or psychological well-being, including “self-acceptance, purpose in life, environmental mastery, positive relationships, personal growth and autonomy” (p. 30). Psychological and sociocultural dimensions have also been addressed in terms of cross-cultural adjustment, involving psychological adjustment to a new environment and sociocultural adjustment within relational conditions in the host country (Alharbi & Smith, 2018). Therefore, in this study, international students’ well-being is conceptualised as a construct entailing satisfaction with one’s life on subjective, psychological and sociocultural levels in the host country.

Oftentimes, international university students share adjustment problems affecting their well-being. One such adjustment problem concerns difficulties in the foreign language of instruction, which can lead to struggles with course content and academic writing, and contribute to stress regarding participation and presentations in courses (Erichsen & Bolliger, 2011). In addition to this, international students may have to adjust to the academic responsibilities teaching staff and supervisors expect them to respond to, especially on a postgraduate level, such as being self-directed in one’s learning trajectory, working independently, and developing research and critical thinking skills (Filippou, 2019). Another important adjustment problem is international students’ sociocultural adjustment, which is a long and uneven process necessitating time and supportive university structures in the early stages of their stay in the host country (Coles & Swami, 2012). Acculturation entails different stages of emotional adaptation and the stress it generates manifests in homesickness, culture shock and adjustment to new social and cultural exigencies (Lillyman & Bennett, 2014). A third adjustment problem is international students’ diminished social support, stress and loneliness, which can affect international students’ psychosocial adaptation and perceived psychological distress (Oreilly, Ryan, & Hickey, 2010).

Difficulties in sociocultural adjustment, coupled with language concerns, academic performance, pressure to succeed, financial concerns and plans after graduation, affect international students’ sense of self-efficacy and confidence for completing their study programme (Beiter et al., 2015; Telbis, Helgeson, & Kingsbury, 2014). These issues may present challenges to university efforts and student counselling services targeting international students’ psychological well-being. This may be especially so under the conditions of a nation-wide lockdown and students’ continuation of their studies remotely, when trying to cope and ways of coping with novel circumstances in a foreign country may highly influence

international students’ affective and functional state (e.g. Akhtar & Kroener-Herwig, 2019).

### 3 Research task

This study reports on the opinions and experiences respondents volunteered in response to an open-ended question and answers the following research question:

What changes in well-being did international Master’s degree students describe in relation to the move to online teaching and learning at a Finnish university during the COVID-19 pandemic?

## 4 Methods

### 4.1 Respondents

The respondents were students enrolled in international Master’s degree programmes at a Finnish university. Respondents’ demographic and background information is presented in Table 1. According to background questions, the respondents reported feeling little to moderate stress on a daily basis during the academic year ( $M = 2.65$ ), feeling quite able to handle stress when experiencing it ( $M = 2.84$ ), and not feeling particularly challenged in terms of academic English ( $M = 2.14$ ). The study did not process any sensitive information and respondents’ consent to participation was contingent on their acceptance of the privacy notice. This privacy notice was provided in the beginning of the survey and explained study aims, respondents’ rights, and data collection, processing and storage procedures in compliance with the regulations stipulated by the EU General Data Protection Regulation.

### 4.2 Data collection

In an attempt to explore IMDs’ levels of stress at a Finnish university, a survey including two questionnaires and an open-ended question was distributed through an online platform from June to early August 2020. These questionnaires measured university students’ perceived sources of academic stress and the negative emotional states of depression, anxiety and stress. To account for changes in the university’s provision of education during the nation-wide lockdown against the spread of COVID-19 as a possible source of stress for IMDs (see also Elmer et al., 2020), an open-ended question was included at the

**Table 1:** Respondents' demographic and background information.

Demographic and background information		n
Gender	Male	10
	Female	27
Marital status	Single	23
	Co-habiting	5
	Engaged	1
	Married	7
	Divorced	1
Birthplace	Africa	2
	North America	5
	South America	1
	Asia	10
	Europe	19
Year in the university	First	19
	Second	12
	Fourth	2
	Other	4
Faculty	Education and Psychology	11
	Humanities and Social Sciences	8
	Information Technology	8
	Business and Economics	8
	Sport and Health Sciences	2
Academic course failure experience	None	30
	Once or twice	7
Previous experience of work	Yes	32
	No	5
Previous experience of living abroad	Yes	30
	No	7
Previous experience of living outside own childhood home	Yes	34
	No	3

end of the survey: “The COVID-19 pandemic has recently affected teaching and learning at [the university]. Please shortly share your emotional experience or opinion here.” While the response rate to the survey was low ( $N = 41$ ), most respondents ( $N = 37$ , average age 29.03 years) chose to answer the open-ended question. Some answers were short (2-29 words; 10 answers), most were moderately long (31-68 words; 23 answers), and four were notably long (114-

494 words). This study focuses on respondents' voluntary answers to the open-ended question, whose analysis is reported in the following section.

## 4.3 Data analysis

### 4.3.1 Preliminary analysis

A preliminary analysis of the open-ended question data in relation to the research question was conducted by the second author to support the subsequent thematic analysis primarily conducted by the first author. The preliminary analysis involved a quantitative content analysis providing a co-occurrence network that enables grasping an overview and visualising the features and potential relationships in the text data (Higuchi, 2016a). KH Coder was used for the quantitative content analysis, because it automatically extracts words from data and systematically generates a picture while mitigating researcher bias (Higuchi, 2016a). In the picture KH Coder draws, meanings of the relationships of the words can be analysed through understanding which words appear frequently and how each word connects to one another (Kim, Yamamoto, Ito, & Shimura, 2020). Since the sample size was small, this analysis investigated the co-occurrence network among words in the data used more than 4 times, excluding personal pronouns (e.g. I and you) and interrogative pronouns and adverbs (e.g. what, where and when).

### 4.3.2 Preliminary analysis results

Figure 1 shows the co-occurrence network generated by KH Coder. The size of the circle represents the frequency of the word used. Solid lines between circles indicate stronger association than dotted lines. When looking at the co-occurrence network, it is important not to focus on where words are located in the network, but whether words are linked by lines (Higuchi, 2016a). For example, “Finland” is not associated with “home”, which means these two words were not mentioned together. KH Coder provided “communities (sub-graphs)” (Higuchi, 2016b, p. 53). This means that parts of the network are more closely connected with each other (Higuchi, 2016a), where words in a community frequently emerge together. Based on the communities KH Coder suggested, this study preliminarily suggested seven concern groups. Four of these groups involved respondents' studies (i.e. affected concentration, meeting and socialising with other people,



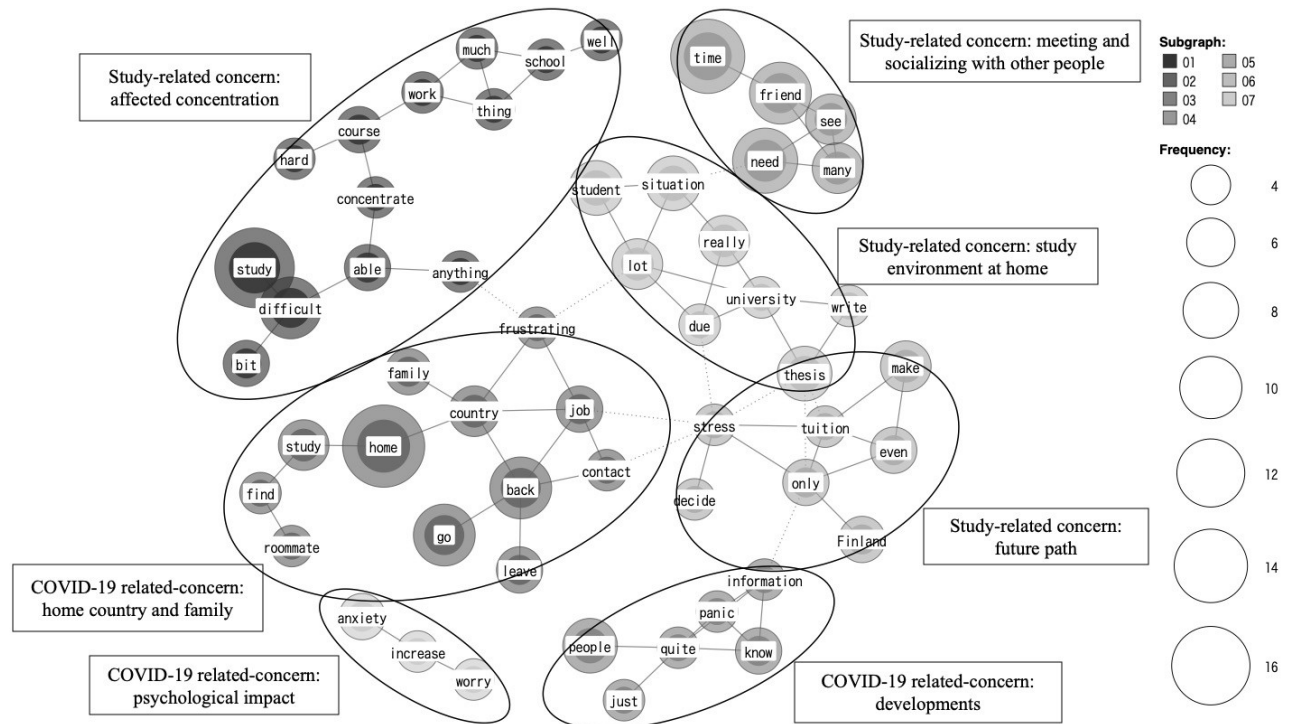


Figure 1: Co-occurrence network of international Master's degree students' well-being.

study environment at home, students' future path), and three groups involved the respondents' reaction to the pandemic (i.e. home country and family, emotional impact and developments). All authors were involved in reviewing the final grouping of the quantitative content analysis.

### 4.3.3 Main analysis

The main analysis approached the text data in the open-ended question thematically to provide a more intricate connection with the account from which the codes of the quantitative content analysis were drawn. The thematic analysis was informed by a post-structural ontology, whereby language and the ways we use language to create discourses are integral to constituting our social and psychological realities (Braun & Clarke, 2013, p. 189). Because of this orientation and due to most answers being of moderate length, the 37 answers were first coded in detail by the first author using respondents' own words or implied meanings. The codes were then reviewed for fit in relation to the coded excerpts by the first and third author, and later grouped by the first author into small themes capturing the essence of these codes (Braun & Clarke, 2006). The smaller themes were reviewed and

refined by all three authors, and further developed into two distinct themes, which concerned respondents' well-being in relation to the university moving to online teaching and learning (Braun & Clarke, 2006). The analysis was guided by a conceptualisation of themes "as meaningful entities that are constructed from codes that unify disparate data, and capture the essence of some degree of recurrent meaning across a data-set" (Braun & Clarke, 2016, p. 740).

Table 2 shows the thematically developed themes, while Table 3 shows the convergence between the subthemes developed using thematic analysis and the themes identified by the quantitative content analysis. Most subthemes developed using thematic analysis converged strongly with the themes identified by the quantitative content analysis. However, three themes developed using thematic analysis were not adequately captured by the themes of the quantitative content analysis, namely the desire for human connection as a personal concern, perception of coursework, and online teaching and supervision. On the other hand, the thematic analysis did not highlight the psychological impact as a stand-alone subtheme; psychological impact extended beyond anxiety and worry and permeated the data, which are presented in the following section in more detail.

Table 2: Thematic analysis results.

Themes	Subthemes	Codes	Code strength/37
Well-being in relation to private life	desire for human connection	limited social circle	1
		limited social interaction	3
		missing warmth	1
		saying goodbye to friends	1
		studying as the only activity	1
		encountering distrust	1
		being bound at home	5
	ways of coping	introversion helping one manage well	1
		precautions	1
		viewing past concerts	1
		border closure	2
		nothing much changed	4
	health concerns	uncertainty of the future	2
		concerns over one's health	1
		worry over family health	6
		mental well-being	5
Well-being in relation to studies	importance of social life on campus	uncertainty about online studying with limited social interaction	1
		social life on campus	4
		isolated	1
	affected concentration and motivation	fluctuating productivity	1
		unproductive	1
		closed university facilities for studying	3
		unmotivated	4
		difficulty concentrating	7
	degree-related complications	giving up on study-related plans	2
		giving up on studies	1
		concerns over graduation	1
		concern over tuition fees	2
		concerns over career after graduation	2
	perception of coursework	more time to complete coursework	1
		demanding coursework	1
		increased coursework	1
		meeting coursework needs	1
	online teaching and supervision	issues with thesis supervision	1
		internet connection problems	1
		happy with online lecturing	2
		support from teachers	3

**Table 3:** Theme convergence between the thematic and quantitative content analyses.

thematic analysis	quantitative content analysis
desire for human connection	-
ways of coping	COVID-19-related concern: developments
health concerns	COVID-19-related concern: home country and family COVID-19-related concern: psychological impact
importance of social life on campus	Study-related concern: meeting and socialising with other people
affected concentration and motivation	Study-related concern: affected concentration Study-related concern: study environment at home
degree-related complications	Study-related concern: future path
perception of coursework	-
online teaching and supervision	-

## 5 Findings

Two themes were developed in the main analysis. The first theme concerned respondents' well-being with regard to their friends and families, whereas the second theme concerned respondents' well-being with regard to their studies.

### 5.1 Well-being in relation to private life

This theme captures the effect that staying at home as a response to COVID-19 circumstances had on respondents' well-being in terms of personal life. Four respondents felt that staying at home did not alter their daily life much and three respondents expressed ways of managing the situation, such as taking precautions, monitoring local news about border closure, viewing videos of past concert events, and using their introversion to their advantage:

I'm an introvert at heart, so to be honest the pandemic did not affect my emotional state too much. I feel a bit of fear and apprehension as I'm in the risk group, but I feel like I've mostly managed well. (IMDS3)

It was sometimes a bit difficult especially at the start when no one knew what was going on and how it would be. But since the epidemic was sort of under control in Finland I got a lot more relaxed again and was able to enjoy the summer while continuing my studies. (IMDS35)

For seven respondents, however, the situation elicited a general sense of uncertainty about future developments and, more importantly, considerable concern about the health of family members. For instance, IMDS21 explains how "[a]nxiety and stress levels have increased because of the fear for the health of the loved ones", while IMDS25 poignantly describes his helplessness in the face of possible threat to their family's health:

I was specially worried about family, because they are living in a country with a lot of cases of Coronavirus, where actually some relatives and friends of mine have passed away due to the virus. Being stuck at home and not being able to do anything for them while dealing with assignments, deadlines and online meetings was really frustrating.

Except for IMDS3 and IMDS36, the respondents did not appear concerned with their own physical health, although they were well aware of how mentally taxing the novel circumstances had been for them. Some reported about "[t]he feeling of being stucked while the time was passing. Aware of procrastinating" (IMDS10), feeling "mentally tired as the summer months approached" (IMDS14), and "[f]eeling sad and had difficulty sleeping, watching many nigh[t]mares" (IMDS21). IMDS8 and IMDS32 reported the strongest reactions, suggesting COVID-19 circumstances may have a lasting influence over international students:

It's been an emotional rollercoaster of not being able to get out of bed, [...] problems becoming bigger and more difficult to solve and more anxiety attacks combined with 1-4 days a week of hype, maximum productivity and positive attitude. (IMDS8)

My anxiety levels increased in incredible amount from the start of the pandemic in January 2020. Even as I type this, my heart rate is increasing and I can feel the anxiety and panic rising within my chest. (IMDS32)

In addition to anxiety, stress, sadness and other potent emotional states affecting respondents' mental well-being, respondents wrote about being housebound and having a diminished social circle. Staying at home for long "was a bit frustrating" (IMDS11); it involved the same workspace (e.g. "sitting at the same table all day in my flat", IMDS3) and the same environment, which felt crowded in shared accommodation: "It was difficult to wake up every morning and study and connect to zoom meetings in the same room. The space felt small and sharing it with other people



(roommates) made it even difficult" (IMDS27). Moreover, entertainment at home seemed to be significantly limited, as "the only things I could do was work at home, study at home and not do anything fun outside" (IMDS18). At the same time respondents stayed at home, they found themselves belonging to a smaller social circle. IMDS24 describes the closing of the university due to the pandemic as something that "definitely" affected them, and their losing "social interactions" as a consequence was "seriously challenging." For their part, IMDS1 alarmingly reported they had "almost nobody to talk [to]," IMDS9 reported being "isolated" and "in general [...] lonely," and IMDS26 regretted seeing friends leave the host country: "It definitely affected because I lost the human contact even though I am not a very outgoing person. And also seeing friends go back leaves some sentimental feelings."

Given the COVID-19 pandemic circumstances in Finland, it is reasonable to assume that respondents' answers describing worry over their family's health, individual ways of coping, and a keenly felt loss of connection with others are to be expected. However, the acutely experienced changes in mental health present a challenge for student services in the host university. Moreover, the need or desire for human connection and the implied need for variation in activities and surroundings suggest a degree of vulnerability for IMDSs living in the host country during a pandemic.

## 5.2 Well-being in relation to studies

This theme captures the effect of studying from home because of the university deciding to move teaching and learning to online platforms in response to COVID-19 circumstances. Similar to well-being in their personal life, respondents' well-being as students was influenced by their lack of social interaction with fellow students, which seemed to be coupled with a preference for contact teaching. For instance, IMDS12 states, "Going for physical classes was good before the pandemic. Not having to speak to people especially new people or my classmates was quite challenging. A solitary life is not just for me." Another five respondents echoed that, commenting that "[p]hysical contact classes are better. You get to interact with your course mates" (IMDS34), and "if i have to study online for the next academic year, I don't know how to handle it when the only person I can speak to is my husband :((((" (IMDS2). Elaborating more on the present, IMDS13 explains her situation as a mother of two school-age children, for whom "therefore it has been much harder than I expected to get through this year of studies."

Respondents' sense of well-being in relation to their studies was further influenced by complications involving coursework, their progress towards the degree, distance learning, and remote supervision. Having to engage in distance learning, three respondents felt the coursework "became more challenging and demanding" (IMDS22). For example, IMDS25 shares:

I would define my emotional and study experience during the COVID-19 pandemic as stressful and highly frustrating. The workload seems that increased because of distance learning and dealing with the new situation.

Well-being was further affected by respondents' cancellation of study-related plans (IMDS14), discontinuation of their studies altogether (IMDS7), and concerns over degree completion. IMDS19 shared feeling "incredibly stressed that I will not graduate in the winter", while IMDS22 was one of the students who felt stressed due to tuition fees. Talking about the extension of their scholarship as a tuition-paying student, IMDS19 wrote:

I still needed to write my thesis (otherwise I needed to extend my study period and which means, I need to pay tuition fee). [...] Although I know it was difficult for the university administrations to decide the details of the exceptional measurement, honestly the uncertainty of this measurement made me feel even more stressful... since I needed to consider if I should apply for this extension or submit my thesis by the original due date. When I just got the information about this exceptional measurement, I got almost panicked to see quite a lot of (negative) feedback on my thesis draft from my supervisor (the comments are all reasonable though!)... Perhaps I was too clumsy to manage everything; anyways, I was really stressed out in the last April.

Due to feeling pressed for time, academic activities may not be paid close attention and tuition fees may be an area of concern for tuition-paying students when studies need to be extended because of external factors (see also Sahu, 2020). In relation to distance teaching itself, two respondents expressed being satisfied with the change. IMDS15 stated "I was happy with online lecturing," and IMDS17 thought "the studies were replaced pretty well online". Moreover, three respondents commented on how supportive their instructors had been, who "often made opportunities to share the anxieties and thoughts" (IMDS22), or "expressed their support and were flexible with deadlines" (IMDS25). Only one respondent shared complications with their supervision, causing them to feel unsupported and alone:

Plus, when Finnish supervisor did not get the challenges of writing thesis during this time for foreign students, it was bit more despair. I am sure they did not meant to any offense,

but in terms of foreigners who does not have family here like Finns does, it left of feeling of not-support but rather isolation. (IMDS24)

In connection to their studies, respondents' decreased well-being was evident in their fluctuating or lack of productivity, loss of motivation and difficulty concentrating. Motivation and concentration, in particular, were mentioned by eight respondents, for example in connection with online courses and thesis writing. Comparing contact teaching with studying remotely, IMDS14 writes, "I felt it was harder to concentrate than usual. The lack of a daily routine made it hard to follow studies as usual while the requirements for the courses were still the same." A similar experience was described by IMDS25, who observed not being "as productive as before because I could not concentrate," and by IMDS16, who commented "it is very hard to get motivated to study remote or complete online courses." Such orientation towards their studies might be recovered from when contact teaching resumes, yet suggests a hindrance to attending courses and staying overall committed to studies at present.

## 6 Discussion

Heeding recent developments regarding the COVID-19 crisis, schools and universities in some European countries, including Finland, moved teaching and learning online. The implications of this crisis for university teaching (e.g. Rapanta et al., 2020) and students' well-being (e.g. Elmer et al., 2020; Li et al., 2020; Odriozola-González et al., 2020) are presently being studied. This study focused on international Master's degree students (IMDSs) studying at a Finnish university during the national lockdown in spring 2020. Drawing on 37 respondents' answers to an open-ended question about teaching and learning online at the end of a two-questionnaire survey concerning university students' stress, the study explored the changes IMDS described in relation to their well-being. The thematic analysis of 37 responses developed two themes; the first concerned respondents' well-being with regard to their friends and family, and the second concerned respondents' well-being with regard to their studies.

One aspect of well-being that these themes jointly highlight is IMDSs' need for social connections in the host country. The respondents' diminished social interaction with others seemed to affect their psychological well-being while self-isolating at home, and their diminished interaction with classmates due to online teaching

seemed to influence a sense of well-being in relation to their commitment to learning and studying. Maintaining good social networks are important for international students' sociocultural and psychological well-being (e.g. Oreilly et al., 2010). Although such networks are seen as only part of their sense of well-being (Alharbi & Smith, 2018), it can be argued that the presence of such networks become more important when, in cases like self-isolation in response to a pandemic, international students worry about family in the home country, have few people to talk to, and bid farewell to friends (see also Bilecen, 2020; Elmer et al., 2020). Interacting cooperatively in distance teaching and learning may also come to play a more important role in international students' well-being. On the one hand, international students in online study programmes report feeling more isolated than their contact-teaching counterparts (Erichsen & Bolliger, 2011). On the other hand, courses and university-home environment interaction contribute to student resilience, an antecedent of students' well-being (Turner, Scott-Young, & Holdsworth, 2017). Hence, the university may act as a support system for international students' psychological well-being and satisfaction with studies and life (Cho & Yu, 2015), through instructor behaviour and interactive course activities during distance teaching.

Another aspect of well-being that the themes jointly highlight is the IMDSs' challenges in coping with the situation affecting study-related responsibilities and mental health. Some respondents found it difficult to concentrate and motivate themselves to complete coursework, attend online lectures, and continue with their thesis. This is important, because, while international students were found to experience more stress and anxiety than resident students do, they also appeared to be more academically engaged early in their studies (Andrade, 2006). Concentration was especially affected when university facilities for studying were inaccessible and the home environment was either distracting or dull. Physical environments have been shown to influence learning, work and mental health (Cooper, Boyko, & Codinhoto, 2010), and IMDSs' accommodation may not always be an optimal environment for studying and other activities. At the same time, other respondents reported deterioration of mental health because of lockdown circumstances, including worry about the health of family and friends, poor sleep quality, and increased anxiety and stress, which further contributed to concentration and motivation difficulties as well as feeling unproductive. While this situation was rather connected with COVID-19-related exigencies, it was an indicator of reduced psychological well-being and poor coping; as such, it can interfere with students'

emotional state as well as engagement, persistence and performance in their studies (Akhtar & Kroener-Herwig, 2019; Moses, Bradley, & O'Callaghan, 2016). Deterioration of mental health may further be indicative of lower life satisfaction, attenuated optimism and a decreased sense of self-efficacy, which are important predictors of stress (Saleh et al., 2017). Especially considering the restricted autonomy and outlets for negative emotional or mental states during a lockdown, it is important to help IMDs navigate experienced tensions directly or indirectly affecting their studies.

## 7 Limitations and conclusions

Despite its relevance for universities and international students' well-being, this study presents certain limitations. First, the survey, whose qualitative data was used, had few respondents. This could be due to the time of survey distribution, as July is a holiday month in the Finnish academic calendar and IMDs might not have been checking their university email during that month. It could also be due to IMDs' belief that they do not experience enough stress, anxiety or depression to justify participation in the survey. Nonetheless, of the 41 respondents, 37 chose to share something in the non-obligatory open-ended question, suggesting the situation might have affected some IMDs enough for them to want to communicate their experience to the university. Second, the study focused solely on one Finnish university and is, therefore, too limited to account for a broader population of IMDs, which tends to vary considerably in terms of age, origin, discipline, and expectations for their study programme. Third, the themes of the thematic analysis could have been comprised of more robust subthemes; while the subthemes were internally coherent and consistent (see Braun & Clarke, 2006), many codes were weak (i.e. occurred once or twice). However, the preliminary quantitative content analysis supported the grouping of codes under their respective subthemes, proving a helpful tool for subsequent detailed coding of text data.

While this study is small in size and scope, it supports arguments that particular psychological and sociocultural challenges present in online learning, situations of increased social isolation, and pandemic-specific worries are important for students' mental health and well-being (e.g. Bilecen, 2020; Elmer et al., 2020; Erichsen & Bolliger, 2011; Nguyen & Balakrishnan, 2020; Oreilly et al., 2010). Sociocultural well-being was important

in terms of connection to peers, although it was not related to acculturation per se, which has been reported as key to international students' well-being in the host country (Coles & Swami, 2012; Lillyman & Bennett, 2014). Moreover, psychological well-being featured prominently in respondents' answers with repercussions for their studies. In terms of practice for universities, the study supports the need to carefully monitor university students' health (Odriozola-González et al., 2020), and extend professional support (Li et al., 2020), such as by online guidance and counselling appointments or well-being workshops. Relevant to international students' well-being during the pandemic are also reactive and proactive measures suggested against university students' academic stress, anxiety and depression, involving support mechanisms like mentor-mentee programmes, student health committees, and raising awareness regarding counselling centres and how to seek help (see Kumaraswamy, 2013). Finally, while the university student health services should identify students struggling with social isolation and psychological tensions (Elmer et al., 2020), international students should invest in family and (digital) social contacts to constructively counter the negative effects of staying and studying at home.

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